Zack Fravel

4607 SE Taylor St
Portland, OR 97215

mail@zackfravel.com
+1 (501) 519 7667

Career Profile

I'm a computer engineering graduate with 4 years of academic experience designing circuits and programming. I also have 2 years of experience working in electronics manufacturing. I'm currently enrolled in the Design Verification and Validation program at Portland State.

Highlights

- 2 years of hardware design experience with Verilog, VHDL, and industry standard tools.
- Proficient in fundamental programming paradigms and scripting with Python.
- Experienced troubleshooter in time-sensitive, high-volume manufacturing conditions.

Education

Master of Science in Electrical & Computer Engineering — **September 2020 - Present**
Portland State University, Portland, OR.

Bachelor of Science in Computer Engineering — **August 2014 - May 2018**
University of Arkansas, Fayetteville, AR.

Work

Intel — **May 2019 - April 2020**
Aloha, OR
Die Sort Manufacturing Technician

Worked full-time on the night shift at Intel performing troubleshooting, preventative maintenance tasks and advanced calibrations on state-of-the-art manufacturing tools. As shift maintenance team coordinator, I frequently collaborated with engineering teams to implement improved procedures for a safer, more efficient sort floor.

Electronics Assembly Technician — **July 2018 - May 2019**
Portland, OR

Contributed as an assembly technician for two modular synthesizer startups in Portland. I am trained in through hole and SMT soldering and have experience in electronics manufacturing from PCB design, assembly, QC and rework, to shipping.

Experience

System Synthesis and Modeling: Reduced MIPS and Custom ISA Synthesis Projects
Designed and tested two microprocessor architectures in VHDL and Verilog respectively. The first design I completed was a Pipelined MIPS Datapath capable of handling branch, jmp, memory, and arithmetic functions. The second project was more complex as it was written in Verilog, synthesized using Synopsys Design Compiler, and was a more custom design.

Embedded Systems: FPGA Design and Synthesis
Completed a wide variety of FPGA design projects that taught me the importance and potential of rapid prototyping. I gained a solid understanding of the fundamentals of FPGA architecture and prototyping with simple FSM designs like traffic lights and vending machines to more complex designs like a Wishbone-UART Rx/Tx Bus.

Digital Design, Synthesis, and Layout
Gained about a year of experience with industry standard digital design tools from Synopsys (HSPICE, Design Compiler), Cadence (Innovus, Virtuoso), and Mentor Graphics (Modelsim, Calibre) learning the fundamentals of design synthesis, placement, and routing techniques.

Low Power Digital Systems Design: Vedic Multiplier
Spent a semester studying the fundamentals of low power digital design from circuit-level power reduction techniques all the way up to algorithm and system-level low power methodologies. The semester culminated in a project where I used an algorithm from Vedic mathematics to design a low-power multiplier.

Work Samples: https://github.com/zackfravel